MAHARSHI DAYANAND SARASWATI UNIVERSITY, AJMER

पाठ्यक्रम

SYLLABUS

SCHEME OF EXAMINATION AND COURSES OF STUDY

FACULTY OF SCIENCE

Certified Course in Soil and Water Conservation Examination

2009–10 से प्रभावी(w.e.f.)

सत्र 2013–14

महर्षि दयानन्द सरस्वती विश्वविद्यालय, अजमेर

NOTICE

1. Change in Statutes/Ordinances/Rules/Regulations/ Syllabus and Books may, from time to time, be made by amendment or remaking, and a candidate shall, except in so far as the University determines otherwise comply with any change that applies to years he has not completed at the time of change. **The decision taken by the Academic Council shall be final.**

सूचना

1. समय-समय पर संशोधन या पुन: निर्माण कर परिनियमों /अध्यादेशों / नियमों / विनियमों / पाठ्यक्रमों व पुस्तकों में परिवर्तन किया जा सकता है, तथा किसी भी परिवर्तन को छात्र को मानना होगा बशर्ते कि विश्वविद्यालय ने अन्यथा प्रकार से उनको छूट न दी हो और छात्र ने उस परिवर्तन के पूर्व वर्ष पाठ्यक्रम को पूरा न किया हो। **विद्या परिषद द्वारा लिये गये निर्णय अन्तिम होंगे।**

Certificate Course in Soil and Water Conservation

Scheme

1. Names of following papers

	Max. Marks	Min. Marks
Paper I - Water : Resources, quality and conservation	100	25
Paper II - Soil : Resources, Quality and Conservation	100	25
Paper III - Practicals Field Report	50+50=100	36

2. Minimum qualification (Eligibility) for admission in the proposed Course : 10+2 with science biology/science mathematics/agriculture
3. Periods (Number of periods for Each Paper)
   60 Periods for each theory/practical
   Minimum Pass Marks :
   25 in each paper of theory but 36% marks in aggregate are essential

I Division	60%
II Division	48%

Syllabus of Cerfiticate Course in Soil and Water Conservation

Water : Resources, quality and Conservation

Paper I

Water Resources

Jydrological cycle, Assessment of surface and groundwater resources. national water resources. Economics of water use, legal control of water use. Need for sustainable water management. NGOs and their role in water management practices.

Occurance

Vertical distribution of ground water. Aquifers, confined and unconfined. Water table variations. Perched water table. Porosity and permeability. Movement of ground water, Darcy's Law. Types of wells. Introductory ideas about the following : Water logging, conjuctive use of water; Causes for depletion of water table. Water analysis kit and its use. Elementory idea about ground water exploration.

Water Quality

Physical, chemical and biological characteristics of water, their significance. Standards for drinking and agriculture water.

Water Conservation

Introductory ideas :

Conservation measures : Gully control. terracing, bunding, check dams; reclamation of soils. Afforestation.

Water harvesting. Rain water harvesting, rood water harvesting, artificial recharge. Water Conservation and management agencies in India and abroad.

Soil : Resources, Quality and Conservation

Paper II

Basic Classificationof rockes
Land Classification and use : Causes of Soil degradation.
Soil Survey : an inventory of the soil resource
Soils of the India
soils of Rajasthan
Physical, Chemical and biological characteristics of Soil, Soil Profile (A,B & C horizones)
Soil Erosion processess and prediction (Wind)
- Soil erosion by wind - physical process
- Soil erosion by wind : Estimating rates of loss

Soil erosion processes and prediction (water)
- Soil erosion by water : rainfall and erosivity
- Soil erosion by Water : soil ere dibility
- Watersheds
- Soil erosion by water : Universal Soil Loss Equation (USLE)

Soil conservation in Agriculture
- Soil conservation : Cropping systems
- soil conservation : Tillage

Agricultural conservation pra tices
Soil Conservation : Terraces and diversion
soil conservation
- Windbreaks and shelterbelts
- Vegetating mining and other construction site
- Vegetating areas of high erosion hazards
- Streambank erosion control structure and bank stablization

Paper III - Practical

1. Water Analysis
   pH, conductivity, hardness, alkalinity, turbidity, Chloride, DO
2. Soil Analysis
   Physical - Texture, Water holding capacity, moisture content, collodial matter, porosity
   Chemical - pH, Salinity, alkalinity, Carbonate, organic Content, NPK
3. Study of soil Profile :
   Field study for the study of land forms and rocks.
4. Visits on sites of environmental interest land pollution and water pollution.

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